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DOLICHOPODIDÆ OF GRENADA, W. I.

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THIS family is represented by fifty-five species, of which fourteen are herein described as new, and twenty-seven were described in my previous paper on the Diptera of St. Vincent. Twelve species in the lot from St. Vincent were not found in this collection. Only one of these was known prior to the publication of the St. Vincent paper.

I have made a consolidated list of the Dolichopodidæ of these two islands for comparison of their fauna. *V.*, after the species, indicates its occurrence on St. Vincent; *G.*, on Grenada.[1] A star indicates that the species was previously known. All unstarred are described in the two papers. New genera are indicated.

List of Dolichopodidæ from St. Vincent and Grenada.

GYMNOPTERNUS.
- ruficornis. V.

PELASTONEURUS.
- argentiferus. V. G.
- unguiculatus. V.

PARACLIUS.
- nigripes. G.
- fuscicornis. G.
- discifer. G.

PARACLIUS.
- quadrinotatus. G.
- *venustus. G.
- bellus. G.
- filiferus. V. G.
- abdominalis. G.
- *arcuatus. G.
- *claviculatus. G.

[1] NOTE.—Grenada and St. Vincent are two small islands of the Windward group of the Lesser Antilles, distant, respectively, about 75 and 150 miles from the Venezuela coast. Extensive collections were made in the two islands a few years ago, by Mr. H. H. Smith, for the Entomological Society of London. The material from St. Vincent was worked up by Dr. S. W. Williston, except the families *Dolichopodidæ* and *Phoridæ*, which were undertaken by me, at Doctor Williston's request. The report was published in Trans. Ent. Soc. Lond., 1896, pp. 253–446, 7 pl. It was intended that the Grenada material should be published in the same way, and the present paper was prepared some time ago; but pressure of work has prevented the completion of the report on the other families, and it has been thought best not to delay the publication of the present paper any longer.

List of Dolichopodidæ from St. Vincent and Grenada.

SARCIONUS.
lineatus. V. G.
HERCOSTOMUS.
latipes. V. G.
POLYMEDON.
superbus. V.
NEURIGONA.
decora. G.
signifera. V. G.
ANEPSIUS.
linearis. V. G.
SYMPYONUS.
frater. G.
falco. V. G.
similis. V. G.
LEPTOCORYPHA, n. gen.
pavo. V.
EUTARSUS.
sinuatus. V. G.
DIAPHORUS.
amœnus. G.
dimidiatus. V. G.
flavipes. V. G.
contiguus. V. G.
simplex. V. G.
dubius. V. G.
*opacus. V. G.
*spectabilis. V. G.
parvulus. V.
ASYNDETUS.
*syntormoides. G.
fratellus. V. G.
CHRYSOTUS.
paradoxus. G.
albipalpus. V. G.
niger. V. G.
excisus. V. G.
hirsutus. V. G.
CHRYSOTUS.
longipalpus. V. G.
proximus. V. G.
flavus. V.
acutus. V.
inermis. V.
*picticornis. V. G.
*barbatus. V. G.
THRYPTICUS.
cupuliferus. V. G.
minor. V. G.
singularis. V.
ACHALCUS.
caudatus. G.
sordidus. V. G.
XANTHINA, n. gen.
plumicauda. G.
THINOPHILUS.
sp. G.
CŒLOGLUTUS, n. gen.
concavus. V.
MEDETERUS.
exiguus. G.
PLAGIONEURUS.
*univittatus. G.
LEPTORHETHUM, n. gen.
angustatum. V.
PSILOPUS.
bellulus. V. G.
*jucundus. G.
*chrysoprasius. V. G.
*caudatulus. V. G.
insularis. V. G.
GNAMPTOPSILOPUS.
flavicornis. V. G.
flavidus. V. G.
*bicolor. V.

The most striking things about the table are the preponderance of *Paraclius* in Grenada, near the mainland, and the larger number of new genera in St. Vincent, farther off shore.

The mounting of these collections is exceptionally fine, and deserves mention. Out of several hundred cases where a male and a female were mounted on the same pin, there was only one where they were not of the same species. This is an astonishing fact—a record to be proud of, considering that the collecting was general and these species all minute.

PARACLIUS.

Loew, Monogr., 97, 1864 (*non* Bigot).

The relationships of *Paraclius*, *Pelastoneurus* and *Sarcionus* are somewhat puzzling. I have considered as belonging to *Pelastoneurus* those species only which have the face broad in both sexes, with a slight concavity in the upper part and a marked convexity below. The arista is distinctly plumose. The fourth vein in its last part converges toward the third with more or less abruptness, but I do not regard this as the essential character. *Sarcionus* includes species with narrow face, comprising in the male about a tenth the width of the head; it is but little, if any, convex below; the arista is plumose. In the female the face is about a sixth the width of the head, and has more resemblance to that of *Pelastoneurus*. The fourth vein converges strongly toward the third in the latter part of its course. In *Paraclius* the face is like *Sarcionus*, but the arista is bare or only moderately pubescent. The fourth vein near its end makes a somewhat sudden curve toward the third, then gradually resumes its former course, forming a curve with its concavity outward; this is quite variable in shape, and in at least one species there is no marked concavity, as in *Pelastoneurus vagans*. The characters of the face and arista seem most substantial.

Table of North American and West Indian Species of PARACLIUS.

1. Front femora black 2
   Front femora yellow 5
2. Tibiæ all black, costa not thickened ..... *nigripes*, n. sp.
   Tibiæ not all black, or else costa conspicuously thickened 3
3. First section of costa greatly thickened in male, moderately in female ..... *albonotatus* Loew.
   First section of costa not thickened 4
4. Hind tibiæ yellow ..... *fuscicornis*, n. sp.
   Hind tibiæ mostly black ..... *pumilio* Loew.
5. Antennæ black ..... *arcuatus* Loew.
   Antennæ chiefly yellow 6
6. Arista in the male enlarged at tip, disk-like 7
   Arista in the male not enlarged at tip 8
7. Arista long, tapering, thin ..... *discifer*, n. sp.
   Arista quite short, thick ..... *claviculatus* Loew.
8. Two velvet-black spots between the root of the wing and the humerus ..... *quadrinotatus*, n. sp.
   Only one spot 9
9. Dorsum of thorax wholly deep green on anterior part 10
   Dorsum of thorax with a bronze stripe between acrostichal bristles ..... *filiferus* Ald.
10. The curve of fourth vein occurs half-way between the posterior cross-vein and the apex ..... *venustus*, n. sp.
    The curve occurs two-thirds of the way to the tip ..... *bellus*, n. sp.

Paraclius nigripes, n. sp.

Male: Face with dense whitish dust, rather wide in the lowest part, antennæ of ordinary size, wholly black, arista bare, front with gray dust, orbital cilia, except a few above, snow-white. Thorax steel-blue above; the same color overlaid with thin white dust on the pleuræ. Halteres yellow, tegulæ whitish, with black cilia. Abdomen dark blue-green, rather dull, with some white dust along the sides; hypopygium large, the appendages small, brown; the lamellæ are only rudimentary. Legs altogether greenish black, with thin white dust, from the knees down less green. Fore tarsus as long as its tibia; hind metatarsus as long as the next joint. Wings narrow, infuscated except at base, the fourth vein ending considerably before the apex, only a little recurved near the tip.

Female: Face but little wider, wings less infuscated.

Length, 3.5 to 3.8 mm.; of wing, 2.5 mm. Five males, five females. The shape of the face and the venation are strikingly like the genus *Macellocerus*. The head is not nearly so lengthened vertically, however, as in that genus. It must be regarded as a connecting link between the two genera.

Paraclius abdominalis, n. sp.

Male: Face moderately narrow, extending down to the lower edge of the eye, white on its lower two-thirds, somewhat brownish above; front covered with white pollen, except the ocellar triangle and the root of the large vertical bristles; antennæ black, of moderate size, with plain, tapering arista; orbital bristles white, except about one-third of them on the upper part. Thorax bright, shining bluish green above, very slightly inclined towards violet posteriorly; a broad, black, velvet-like spot above and before the root of the wing; a small, yellow spot just over the humeral spiracle; pleuræ black, thinly dusted with pale gray or whitish; halteres and tegulæ yellow, cilia of the latter black. Abdomen crossed with nearly equal bands of green and violet, the latter occupying the last half of each segment; the green bands are covered with white dust on the sides, and gradually widened; hypopygium thick, large, black, with small, short lamellæ of a sordid white color, black on the edges, and bearing some stout curved hairs on the free basal angle, which is prominent. Legs black, the tips of

all coxæ, the trochanters, extreme tips of femora, all the tibiæ and the bases of all tarsi yellow. Wings subhyaline, only faint traces of brown along the veins; the bend of the fourth vein occurs just past the middle of the last section, and is quite abrupt; the curve back towards its former course is also rather short, so that the vein is nearly parallel with the third for some distance at the end; costa with a long and striking swelling, beginning just after the humeral cross-vein, and continuing almost to the tip of the first longitudinal. Length, 4.4 mm.

Female: Face as in male; front with pollen a little grayish; abdomen with same bands; thickening of costa perceptible. Length, 4.2 mm. Four males, two females. The following label on one: "Lights generally on stones in streams; commonly seen in pairs, the two sexes lighting near to each other; very wary, and difficult to capture."

The species is closely related to *albonotatus* Loew, but the latter has darker wings, third and fourth veins convergent to the tips, swelling of costa larger in female, etc.

Paraclius fuscicornis, n. sp.

Male: Face very narrow in the middle, with brownish pollen, sometimes more whitish; antennæ varying from light to dark brown, of ordinary structure; front with light brown dust. Cilia of lateral and inferior orbit white. Thorax deep blue, varying to purple, shining; pleuræ with thin whitish dust; halteres yellow; tegulæ yellow, their cilia black, abdomen shining blue, the posterior margins of the segments deep purple in the best-developed specimens, the sides of the segments with white dust; hypopygium large, thick, the lamellæ short, brown. Coxæ and tarsi black; the trochanters, knees and tibiæ yellow. The femora are not so dark as in the related species, more deep brown than black. Wings rather slender, slightly infuscated, bend of fourth vein midway between great cross-vein and apex, last part of fourth parallel with third. Costa not thickened.

Female: Face a little wider than in male.

Length, 3.5 to 4.3 mm.; of wing, 3.3 to 4 mm. Five males, five females, one bearing label: "Balthazar (Windward), 250 feet, April 7. Lighting on stones in bed of shady stream."

Paraclius arcuatus.

Loew, Neue Beitr., VIII, 39; Monogr., 101.

Twenty-three specimens, both sexes, one labeled: "Lights on wet mud, generally near water."

These specimens differ quite materially from Loew's description in having the fore coxæ scarcely infuscated at base, hind femora only a little infuscated toward the tip, hind tibiæ yellow except the tip, and the wings only a little brownish; in other words, a light variety as compared with the types. I should have regarded these as a distinct species had I not the undoubted *arcuatus* from Jamaica (by the kindness of Mr. C. W. Johnson) for comparison.

Paraclius discifer, n. sp.

Male: Face moderately wide, with silvery dust; front bright green; antennæ yellow, third joint slightly infuscated at tip, with arista a little longer than the front femur, thick at base, very slender toward the tip and ending in a small oval lamella, just large enough to be visible to the naked eye when held against a white background. Lateral and inferior orbital cilia white. Thorax bright green, a little dusted, the space between the acrostichal bristles, and a roundish spot on each side above the transverse suture, bronze; pleuræ rather dark with gray dust, halteres and tegulæ yellow, cilia of the latter black. Abdomen bright green, but little dusted; hypopygium large, somewhat greenish, the lamellæ brown, with a long upper corner curving backward, so that they might be called crescent-shaped, attached by the lower angle. Front coxæ yellow, the others infuscated; femora and tibiæ yellow; all the hairs infuscated from the tip of first joint. Wings subhyaline, the posterior cross-vein forming a right angle with the axis of the wing, the curve of the fourth vein half way from the cross-vein to the tip, making a very obtuse angle. Third and fourth veins parallel at the apex for a short distance.

Female: Face a litle wider, arista normal, with moderate pubesence. Thorax without the bronze spots.

Length, 3 mm. One male, one female.

Paraclius claviculatus.
Loew, Centuries, VII, 83.

Two males. The arista is rather thick, two-thirds the length of the front femur; the wings are infuscated and the dorsum darker in one specimen. There is a very close relation with *discifer*, yet they are undoubtedly distinct.

Paraclius quadrinotatus, n. sp.

Male: Face moderately wide, the pollen whitish gray; front with brownish pollen; antennæ red, of ordinary appearance, the arista slightly pubescent, cilia of the lateral and inferior orbit white, thorax above somewhat mottled; when viewed from the side, the light coming from above, there is a large, velvet-black spot above the root of the wing and another still larger in the transverse suture. These are separated from each other by a narrow metallic area, and present a very distinctive appearance. Pleuræ black, with gray dust, tegulæ and halteres yellow; tegular cilia black. Abdomen green, the segments dusted with white on the sides; hypopygium of moderate size, the lamellæ small, black, triangular. Fore coxæ yellow, the others brown; femora, tibiæ and first joint of tarsi yellow; tips of tarsi moderately infuscated. Wings more or less infuscated on the costal part, usually but little; curve of fourth vein more than half way from cross-vein to apex, not at all angular, the return curve just before the tip of the same shape reversed.

Female: Differs only in having the face a little wider.

Length, 2.4 mm.; of wing, 2.2 mm. Twenty-five specimens.

Paraclius filiferus.
Aldrich, Trans. Lond. Entom. Soc., 1896, 314.

Numerous specimens.

Paraclius venustus.
Aldrich, Biologia. Diptera, Supplement.

Numerous specimens.

Paraclius bellus, n. sp.

Male: Face narrow, silvery; front green, antennæ red; the arista slightly pubescent; cilia of the lateral and inferior orbit white. Thorax dark blue, shining; the silvery spot on each side at the suture rather large; pleuræ rather heavily coated with

bluish-white dust; halteres and tegulæ yellow; cilia of the latter black. Abdomen with a ringed appearance, the anterior half of each segment bright green, on the sides whitish-dusted, the posterior half blackish, dull; hypopygium large, whitish-dusted; the lamellae very small, yellow, with the apical third blackish. Front coxæ and the tips of the others yellow; femora and tibiæ yellow, fore tarsi infuscated at the tip only, middle ones from the tip of the first joint, hind ones from the base; hind femora and tibiæ both distinctly darkened at the apex. Wings with a yellowish tinge, the fourth vein bent forward near its tip and thence nearly straight, as in *Pelastoneurus*. The hind femora have a row of bristles above of which the last four or five toward the end are quite conspicuous.

Length, 3.1 to 3.6 mm. Four males, seven females.

PELASTONEURUS.

Loew, Neue Beitr., VIII, 36, 1861; Monogr., 103.

Pelastoneurus argentiferus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 313.

Thirty-five specimens, both sexes.

SARCIONUS.

Aldrich, Biologia, Dipt., Suppl., 1902.

Sarcionus lineatus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 312 (*Pelastoneurus*).

Numerous specimens, both sexes. The width of the face in the male is one-twelfth, in the female one-sixth, the width of the head; therefore the species cannot be a *Pelastoneurus*.

HERCOSTOMUS.

Loew, Neue Beitr., V, 9, 1857.

Hercostomus latipes.

Aldrich, Trans. Lond. Entom. Soc., 1896, 311.

Numerous specimens, both sexes.

NEURIGONA.

Rondani, Prod. Dipt. Ital., 142, 1856.

Neurigona signifera.

Aldrich, Trans. Lond. Entom. Soc., 1896, 337.

One male.

Neurigona decora, n. sp.

Male: Eyes barely contiguous on the upper part of the face, slightly separated above and below; front broad, opaque, dark; antennæ small, red, the tip of the third joint brownish; orbital cilia pale. Thorax bright, shining blue, the concavity before the scutellum more bronze; pleuræ green, with thin dust, and the hind margin yellow; tegular cilia yellowish. Abdomen rather short, the first two joints yellow, the rest dark green, shining above. Hypopygium rather prominent, exserted, yellow. Coxæ yellow, the middle ones dark at base; remainder of legs and the tarsi yellow; a slender hair on the outer side of the second joint of the fore tarsus at its apex. Wings a little yellowish; the fourth vein converges toward the third at the end, terminating before the apex of the wing.

Female: Face linear; eyes not contiguous.

Length, 2.8 to 3 mm. Two males, two females. One of the latter is from St. Vincent, but was not mentioned in the previous paper.

Anepsius linearis.

Aldrich, Trans. Lond. Entom. Soc., 1896, 317.

Nineteen specimens.

Eutarsus sinuatus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 334.

Nineteen specimens.

PLAGIONEURUS.

Loew, Wien Ent. Monatsch., I, 43.

Plagioneurus univittatus.

Loew, loc. cit.; Neue Beitr., VIII, 69; Monogr., 196.
Williston, Trans. Amer. Ent. Soc., XIII, 295.

One female. This species has a very striking distribution, considering that it is everywhere uncommon. It is found from Brazil as far north as South Dakota, and east to Massachusetts.

SYMPYONUS.

Loew, Neue Beitr., V, 42, 1857; Monogr., 185.

Sympyonus frater, n. sp.

Male: Front blackish with gray dust; face narrow below, of the same color; antennæ of moderate length, first two joints

yellow, the third black, rather pointed, arista inserted near the base; palpi rather pointed, yellow; occiput with gray dust, the orbital bristles small, at the sides and below whitish. Thorax dark green above, with thin dust and rather large bristles; pleuræ black, with dense, almost white, dust; tegular cilia dark, in some lights almost russet, in others blackish; halteres yellow; abdomen not elongated, scarcely equaling the head and thorax in length, not compressed, dull green in color, with row of longer hairs at the margin of each segment; hypopygium black, thick, rounded, protruding behind and below on the ventral side, making up nearly half the length of the abdomen, with some partially concealed slender yellow parts at the front end. Middle coxæ infuscated on the outer side, the other coxæ and all the feet yellow; the tarsi scarcely infuscated; fore tarsi as long as the tibia, the last three joints of equal length, the fifth black, the inner claw stout, black, curved back upon the joint to form a clasping organ, very much as in *S. falco;* the outer claw normal. On the front side of the hind femur below is a row of black bristles, longer toward the tip; wings grayish, the last section of the fourth vein almost perfectly straight, the third converging toward it at tip.

Female: Like the male, but the face not narrowed below; the fore tarsi normal; no bristles on hind tibiæ.

Length, 2.2 to 2.4 mm.; of wing, 2 mm. Numerous specimens, both sexes. This species, with *falco* and *similis* and the Mexican *coxalis*, forms a group of close relationship, yet sufficiently distinct from each other.

Sympyonus falco.

Aldrich, Trans. Lond. Entom. Soc., 1896, 336.

Two females. The black antennæ and plain fore tibiæ sufficiently distinguish the females from those of the related species.

Sympyonus similis.

Aldrich, Trans. Lond. Entom. Soc., 1896, 336.

Two males, two females. The row of bristles on the fore tibia occurs also in the female, making an easy distinguishing mark.

DIAPHORUS.

Meigen, Syst. Beschr., IV, 1824.
Loew, Mon. N. A. Dipt., II, 156, 1864.

In attempting to separate this genus from *Chrysotus*, which it often greatly resembles, I have followed these rules: First, to assign to *Chrysotus* all species in which the eyes of the male are approximated below the antennæ, and to *Diaphorus* all in which they are approximated above; second, of the considerable number of species in which there is no approximation, to refer to *Chrysotus* all in which the male does not have a group of large bristles at the apex of the abdomen.

In my preceding paper on the Dolichopodidæ of St. Vincent, I made a bad blunder in failing to recognize *Diaphorus spectabilis* Loew, which I redescribed as *D. approximatus*. I have since found further that the numerous females which would almost inevitably accompany "numerous males" in a collection were mixed up with the females of *Lyroneurus simplex* Ald., and they are there yet, as I am unable to find any characters for their separation. The two species being nearly, if not entirely, indistinguishable in the female sex, it seems evident that the genus *Lyroneurus* is insufficiently characterized, and I have accordingly abandoned it. Loew himself (Mon. N. A. Dipt., II, 169) was a little staggered when he came to compare the genus with some North American species of *Diaphorus;* but with the material then known it still seemed tenable. It would certainly be an anomaly, however, if two females not distinguishable from each other would have to be placed in separate genera.

Table of West Indian Species of DIAPHORUS.

1. Femora yellow 2
   Femora black or brown 5
2. Fore coxæ with a row of three long bristles ..... *dimidiatus* Ald.
   Fore coxæ with only small bristles 3
3. Male with very large pendent white palpi ..... *amœnus*, n. sp.
   Male with only ordinary palpi 4
4. Eyes of male not approximated ..... *parvulus* Ald.
   Eyes of male approximated, tarsi infuscated (Cuba) ... *subsejunctus* Loew.
   Eyes of male contiguous, tarsi not or scarcely infuscated ..... *flavipes* Ald.
5. Color green, shining 6
   Color black, but little shining, wings deeply infuscated ..... *opacus* Loew.
   Color black, dorsum gray pollinose, opaque, wings but little clouded ..... *contiguus* Ald.
6. Eyes of male approximated ..... *spectabilis* Loew.
   Eyes of male not approximated 7
7. Male with a long erect bristle on the under side of the hind metatarsus ..... *simplex* Ald.
   Male without such bristle ..... *dubius* Ald.

(*Parvulus* and *subsejunctus* are not represented.)

Diaphorus dimidiatus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 322.

Thirteen males, four females. The latter are readily distinguishable by the bristles of the fore coxæ, although they do not have the yellow color on the abdomen that characterizes the males.

Diaphorus amœnus, n. sp.

Male: Face rather wide, green, in an oblique direction yellow pollinose; front wide, bright green; antennæ black, the first joint slightly elongate, third pointed, arista completely apical; palpi very large, yellowish white, hanging down about a third the height of the head, about two-thirds as wide as long; cilia of inferior orbit white; thorax and abdomen bright green above, somewhat golden, the former a little dusted; pleuræ blackish green, slightly pruinose with white; tegular cilia few, yellowish white; halteres yellow, abdomen slender, the bristles at apex distinct; fore coxæ yellow, the others brown; femora and tibiæ yellow, the hind femora slightly infuscated at tip; fore and middle tarsi slightly exceeding their tibiæ in length; all tarsi gradually infuscated toward the tip; front pulvilli elongated, the others also a little conspicuous; wings of medium size, tinged with gray.

Female: The only female I have is almost exactly like that of *flavipes*. The antennæ being more distinctly black, and the coxæ with noticeably longer and more numerous brown hairs, are the only differences I can detect. The male *amœnus* has but a few long, brownish hairs in a row down the fore coxæ.

Length, 2.5 mm.; of wing, 2 mm. Three males, one female.

Diaphorus flavipes.

Aldrich, Trans. Lond. Entom. Soc., 1896, 323.

Numerous males and females.

Diaphorus opacus.

Loew, Neue Beitr., VIII, 56; Mon. N. A. Dipt., II, 160.
Aldrich, Trans. Lond. Entom. Soc., 1896, 320.

Six males. A comparison with specimens from the United States establishes their identity, as also that of the St. Vincent specimens referred to in the previous article.

Length of the present specimens, 2.8 mm.

Diaphorus contiguus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 323.

Eight males, three females.

Diaphorus spectabilis.

Loew, Neue Beitr., VIII, 57; Mon. N. A. Dol., II, 162.
Aldrich, Trans. Lond. Entom. Soc., 1896, 321 (*D. approximatus*, n. sp.)

Numerous males and females, one labeled "Windsor estate (Windward), 1500 feet, March 28. Cocoa orchard, on herbage." Comparison with specimens from the United States fully establishes the identity. The only difference between the females of this and *simplex* is that the latter are, on the average, slightly larger, but doubtless there are individual cases the other way.

Diaphorus simplex.

Aldrich, Trans. Lond. Entom. Soc., 1896, 333 (*Lyroneurus*).

Numerous males and females. I have explained the change of generic reference at the beginning of the discussion of this genus.

Diaphorus dubius.

Aldrich, Trans. Lond. Entom. Soc., 1896, 324.

Five males, seven females.

ASYNDETUS.

Loew, Centur., VIII, 58, 1869.

In this genus the essential character is in the costal vein reaching only to the tip of the third vein, rather than in the fracture, or even the evanescence, of the fourth vein. The latter characters vary somewhat, but in all the species there is at least a marked thinness of the last part of the fourth vein.

Loew considered that the elongated fore pulvilli of the male would keep *interruptus* in the genus *Diaphorus*, under which it was described. The shortened costal vein, applying to both sexes conspicuously, seems to me to outrank the size of the male pulvilli. I therefore place the species in *Asyndetus*.

Table of North American Species of ASYNDETUS.

1. Last part of fourth vein making approximately two right angles 2
   Last part of fourth vein only gently curved in the middle ..... *syntormoides* Wheeler.

2. Fourth vein at the end straight, ending exactly in apex 3
   Fourth vein at the end curved back, ending distinctly behind apex..... 4

Table of North American Species of Asyndetus.

3. { Dorsum of thorax with a broad, brown-dusted middle stripe, enclosed by two bluish-gray ones ..... *fratellus* Ald.
Dorsum not striped ..... *interruptus* Loew.

4. { Second joint of fore tarsi in the male with a large spine, *ammophilus* Loew.
Second joint of fore tarsi in the male with two yellow processes ..... *appendiculatus* Loew.

Note.—The last two are known only from the United States; *interruptus* is Cuban.

Asyndetus fratellus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 332.

Two males, two females.

Asyndetus syntomoides.

Wheeler, Proc. Cal. Acad. Sci., 1899, 32.

One male, two females. The species ranges as far north as Massachusetts, and west to Kansas.

CHRYSOTUS.

Meigen, Syst. Beschr., IV, 40, 1824.

Table of Species of Chryotus.

North America, including West Indies.

1. { Femora chiefly black or brown 2
Femora yellow, tips of hind ones sometimes infuscated 16
Hind femora black, middle ones yellow, front ones usually with a dark stripe above (U. S. and W. I.) ..... *barbatus* Loew.

2. { Cilia of tegulæ black or brown 3
Cilia of tegulæ pale 10

3. { Third antennal joint in the male large, the tip drawn out in a slender point (W. I.) ..... *acutus* Ald.
Third antennal joint in the male large, with a blunt tip, upper basal angle rising prominently above the second joint, lower edge straight, eyes of male contiguous ..... *obliquus* Loew.
Third antennal joint in the male elongate, blunt, symmetrical ..... *cornutus* Loew.
Third joint not conspicuously elongate 4

4. { Eyes of male not approximated on the face ..... *vividus* Loew.
Eyes of male approximated or contiguous 5

5. { Palpi of male large, projecting, snow white (W. I.) ..... *albipalpus* Ald.
Palpi of male of ordinary structure 6

6. { Femora metallic greenish black 7
Femora brownish black 8

7. { Middle tibiæ wholly yellow ..... *obliquus* Loew.
Middle tibiæ largely infuscated ..... *affinis* Loew.

8. { Third antennal joint of male small, plain (W. I.) ..... *niger* Ald.
Third joint of male kidney-shaped, arista inserted in an apical notch 9

9. { Tibiæ black or brown (W. I.) ..... *excisus* Ald.
Tibiæ wholly yellow (W. I.) ..... *proximus* Ald.

10. { Eyes of male approximated ..... *choricus* Wheeler.
Eyes of male not approximated 11

11. { Palpi white ..... *longimanus* Loew.
Palpi blackish 12

Table of Species of CHRYOTUS.

12. Wing of male with thickened costa 13
    Wing of male without thickened costa 15
13. Costa with a strong enlargement ..... *costalis* Loew.
    Costa with a slight enlargement 14
14. Abdomen with pale hairs ..... *pratincola* Wheeler.
    Abdomen with black hairs ..... *subcostatus* Loew.
15. Femora dark green, shining ..... *discolor* Loew.
    Femora black ..... *auratus* Loew.
16. Cilia of tegulæ pale 17
    Cilia of tegulæ black 21
17. Antennæ black, first joint yellow (U. S. and W. I.) ..... *picticornis* Loew.
    Antennæ black 18
18. Eyes of male approximated, not contiguous 19
    Eyes of male contiguous 20
19. Abdomen with rather abundant black hair above ..... *pallipes* Loew.
    Abdomen with very few hairs (W. I.) ..... *paradoxus*, n. sp.
20. Male with dense brown hair down the outer side of the hind tibiæ and tarsi (W. I.) ..... *hirsutus* Ald.
    Male without such hair ..... *wisconsinensis* Wheeler.
21. Antennæ yellow (W. I.) ..... *longipalpus* Ald.
    Antennæ black 22
22. Eyes of male not approximated (W. I.) ..... *inermis* Ald.
    Eyes of male contiguous 23
23. Third antennal joint of the male drawn out in a fine point (W. I.), *acutus* Ald.
    Third antennal joint not drawn out (W. I.) ..... *hirsutus* Ald.

Chrysotus albipalpus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 327.

Numerous males and females, one labled "Mt. Gay (Leeward), 300 feet, Sept. 10. Flying at sunset."

Chrysotus niger.

Aldrich, Trans. Lond. Entom. Soc., 1896, 327.

Numerous males and females.

Chrysotus excisus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 325.

Numerous specimens.

Chrysotus hirsutus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 328.

Numerous males and females.

Chrysotus longipalpus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 329.

Numerous males and females.

Chrysotus picticornis.

Loew, Monogr., II, 184; Wheeler, Psyche, June, 1890, p. 328; Aldrich, Trans. Lond. Entom. Soc., 1896, 329.

Numerous males and females. I have seen it also in abundance from Georgia. An easily recognized species.

Chrysotus proximus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 326.

Numerous specimens. The lighter color, as compared with *excisus*, applies principally to the fore and middle tibiæ; the thoracic dorsum also is less blue and more bright green.

Chrysotus barbatus.

Synarthrus barbatus Loew, Neue Beitr., VIII, 48; Mon. N. A. Dipt., II, 138 (see also p. 134) (male only).

Chrysotus validus Loew, Neue Beitr., VIII, 63; Mon. N. A. Dipt., II, 175 (female only).

Xiphandrium americanum Wheeler, Ent. News, VII, 152 (both sexes).

Chrysotus apicalis Aldrich, Trans. Lond. Entom. Soc., 1896, pt. II, 330 (both sexes); Ent. News, XI, 533, synonymy.

Numerous specimens of both sexes.

As will be seen, this species has had peculiar misfortunes at the hands of the describers, in which I have indicated my share. If the insect could deceive Loew so completely, certainly the later writers may be pardoned. Professor Wheeler called my attention to the identity of his *X. americanum* with *S. barbatus*. The remainder of the synonymy is my own. The peculiar coloring of the femora has been the main guide in associating these descriptions: Hind ones green, middle yellow, fore yellow, with more or less of a dark stripe above, making a very unusual combination. I see no great impropriety in referring the species to this genus.

Chrysotus paradoxus, n. sp.

Male: Face narrow, the eyes decidedly approximated, front bright green; antennæ small, blackish, with minute pale hairs; palpi minute, dark; dorsum of thorax bright green, the pleuræ blackish; halteres yellow; tegulæ yellow, with a few hairs which are decidedly pale in the proper light, but otherwise indistinctly brownish, especially at base. Abdomen bright above, the hairs yellowish or brownish, not distinctly black; venter slightly pale anteriorly; hypopygium mainly concealed, black, with minute yellowish appendages. I notice two rather strong

hairs, somewhat like those of *Diaphorus*, but they are not blunt at tip. Legs slender, yellow, with minute yellowish hairs; tarsi rather elongate, last joint but little infuscated, the pulvilli all rather large; middle coxæ considerably infuscated. Wings rather slender.

Length, 1.4 mm. One male.

The name is intended to refer to the distinct interblending of the characters of *Diaphorus* with those of *Chrysotus*.

MEDETERUS.

Fischer de Waldheim, Notice, etc., 1819.

Medeterus exiguus, n. sp.

Male: Minute, greenish black, the tibiæ, tarsi and tips of femora yellow, hind metatarsi less than half the length of the following joint and noticeably thicker than it; antennæ black, minute; face and the minute palpi black. Hypopygium black, elongate, slender, reaching the hind coxæ. I cannot make out the lamellæ. Only the apical joint of the tarsi infuscated. Wings hyaline, posterior cross-vein more than its length from the margin, third and fourth veins distinctly convergent. Halteres pure yellow. Bristles of the thorax brownish, almost yellow in some lights.

Female: Hind metatarsi as in the male, but slightly infuscated at tip. Face rather blue above.

Length, 1.4 mm. One male, one female.

CHRYSOTIMUS.

Loew, Neue Beitr., V, 48 (1824).

Chrysotimus barbatus, n. sp.

Male: Face broad, gray, with a distinct transverse angle or suture, just above which are two distinct hairs nearly as large as those of the orbit; palpi small, dark; front gray; antennæ short, rounded, rather dark yellow, the arista dorsal. Dorsum of thorax, pleuræ and abdomen of a dull cinereous cast, with rather pale hairs and bristles. Feet, including coxae and posterior margin of pleuræ, yellow. Hind metatarsus less than half the length of the following joint, with a fine, dense row of pale hairs forming a brush in the shape of an arc of a circle on the inner side at the tip. This is a cleaning or scraping organ for the wings, body, and other legs, I take it.

Length, 1.6 to 1.7 mm. Two females.

THRYPTICUS.

Gerstaecker, Stett. Ent. Zeit., 1866, 43.
Wheeler, Psyche, 1890, 375 (*Aphantotimus*); Proc. Cal. Acad. Sci., 1899.
Aldrich, Trans. Lond. Entom. Soc., 1896, 339 (*Xanthotricha*); Ent. News, 1900, 533.

Thrypticus cupuliferus.
Aldrich, loc. cit. (*Xanthotricha*).

Eight specimens.

Thrypticus minor.
Aldrich, loc. cit., 340 (*Xanthotricha*).

Nine specimens.

XANTHINA.

New genus (*Xanthos*, yellow).

Similar to *Xanthochlorus;* in the described species without metallic color; bristles of legs brown, of body dark brown, almost black; face very narrow in both sexes, eyes almost contiguous in the male; prescutellar depression very distinct. Antennæ short, first joint minute, third rounded, hairy; arista with moderate pubescence, almost or completely apical; acrostichal bristles in two rows. Hypopygium concealed, with two hairy filaments nearly as long as the abdomen. Palpi and legs hairy, hind tibiæ especially so. Venation as in *Chrysotus*.

Xanthina plumicauda, n. sp. (Plate IV, fig. 1).

Male: Front and very narrow face, dorsum of abdomen except the base, and a spot below the tegula, black; elsewhere yellow; palpi decidedly large and hairy; hind tibiæ with two rows of pale bristles on opposite sides toward the tip; wings hyaline.

Female: Abdomen dark brown on the middle of the dorsum; hind tibiæ with ordinary but coarse hairs.

Length, 1.4 to 2.6 mm.; wing about the same. One male, three females.

THINOPHILUS.

Wahlberg, Oefv. K. Vet. Akad., 1844, 37.
Wheeler, Ent. News, VII, 152–156, 1896.

A single specimen of an undescribed species. As Professor Wheeler is engaged on this genus, I prefer not to describe the present species.

ACHALCUS.

Loew, Neue Beitr., V, 30, 1857.

Achalcus sordidus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 339.

Six specimens.

Achalcus caudatus, n. sp.

Male: Face but little narrowed, blackish; palpi and antennæ small, dark brown, the latter with small, rather pointed third joint, the arista almost completely apical, finely pubescent; hairs of the orbit few, seeming to be paler below. Front and thorax black, overlaid with brown dust, which becomes somewhat bluish gray on the pleuræ. Abdomen rather dull black. Cilia of tegulæ yellowish; halteres yellowish, with brown knob. Hypopygium rather disengaged, brown, rounded, in some specimens showing parts of the slender yellow organs inside. Coxæ and all the legs and feet sordid yellow; the fore coxæ and femoræ specially rather dark. Hind metatarsi distinctly shortened. Wings uniform grayish, somewhat slender, fourth vein ending scarcely past the apex; first vein reaching one-fourth the length of the wing; sixth vein represented only by a slight fold.

Female: Except for the absence of the hypopygium, and a slightly stouter form, the same as the male.

Length, 1 to 1.1 mm. Fifteen specimens, both sexes; one labeled "Windsor estate (Windward), 500 feet, March 28. Cocoa orchard, on foliage."

PSILOPUS.

Meigen, Syst. Beschr., VI, 1824.
Loew, Monogr. N. A. Dolichopodidæ, 229, 1864.
Aldrich, Kans. Univ. Quart., II, 47, 1893.

Psilopus bellulus.

Aldrich, Trans. Lond. Entom. Soc., 1896, 343.

Twelve specimens, both sexes.

Psilopus chrysoprasius.

Walker, List, etc., III, 646.
Loew, Neue Beitr., VIII, 90; Monogr., II, 266.
Aldrich, Trans. Lond. Entom. Soc., 1896, 343.

Numerous specimens, both sexes.

Psilopus caudatulus.
Loew, Neue Beitr., VIII, 93; Monogr., II, 271.
Aldrich, loc. cit., 343.
Thirteen specimens, both sexes.

Psilopus insularis.
Aldrich, loc. cit., 344.
Two males, two females.

Psilopus jucundus.
Loew, Neue Beitr., VIII, 87; Monogr., II, 258.

GNAMPTOPSILOPUS.

Aldrich, Kans. Univ. Quart., II, 48, 1893.

Gnamptopsilopus flavicornis.
Aldrich, Trans. Lond. Entom. Soc., 1896, 342.
One female.

Gnamptopsilopus flavidus.
Aldrich, loc. cit., 341.
Two males, four females.

PLATE IV.

FIG. 1. *Xanthina plumicauda.*
New genus and species. × 20. The head had become shriveled in drying.